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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/721,951

Applicant(s)

CHEN ET AL.

Examiner

KAN YUEN

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-42 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CD/CD)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Response to Arguments

1. Applicant's arguments filed on 8/29/2007 have been fully considered but they are not persuasive.
2. Applicant argued for claims 1, and 23 that the reference of Kim does not teach the limitation of "monitoring transmit power information for the communication channel as an indication of current radio conditions at the remote receiver", examiner respectfully disagrees. According to the cited paragraphs 0043, 0046 and fig. 3, the interference level detector 32 detects the signal interference level of signals received from the mobile stations, and because applicant did not specifically defined what is transmit power information, therefore the signal interference level can be broadly interpreted as the transmit power information.
3. Applicant argued for claims 1, 23 that the reference of Kim does not teach the limitation of "changing the data rate for the communication channel based on the transmit power information", examiner respectfully disagrees. According to the cited paragraphs 0043, 0046 and fig. 3, the determinator 34 determines a transmission data rate adjust information based on the signal interference level, and the transmission processor 35 modulates a transmission signal for sending the transmission data rate adjust information from the determinator 34 to each mobile.
4. Applicant argued for claim 11 that the reference of Kim does not teach the limitation of "monitoring power control commands sent from the remote receiver that are associated with controlling the transmit power of the communication channel", examiner respectfully disagrees. According to cited fig. 3, which further leads to paragraph 0048

explaining a base station can comprise a determining means, which determines an interference level of signals received from the mobile stations, and determines a transmission energy level required for each mobile station. Thus, the signals or commands that are received from the mobile stations can be used to determine the transmission energy level (power) required for each mobile station.

5. Applicant argued for claim 14 that the reference of Kim does not teach the limitation of "changing the data rate for the communication channel based on the transmit power information comprises initiation an upward rate change if the one or more filtered values indicate predominantly down commands", examiner respectfully disagrees. Based on the cited paragraph 0046, the interference level detector 32 detects the signal interference level of signals received from the mobile stations; the comparator 33 compares the detected interference level with a threshold value in order to estimate the level of interference. Then the determinator 34 determines a transmission data rate adjustment information (e.g. increase, decrease or maintain) based on the signal interference. Thus the level of signal interference is the indication to the determinator 34 to adjust the rate by either increase (upward), decrease (downward), or remain the same data rate.

6. Applicant argued for claim 13, with similar argument as appeared in claim 14.

7. Applicant argued for claim 3, that the reference of Mimura does not teach the limitation of "generating one or more filtered values of the transmit power and comparing the one or more filtered values against defined upper and lower power limits", examiner will further explain to address the argument. Based on the cited fig. 5, which leads to

column 10, lines 15-40. The power multiplier 301 generates a comparable value to the first comparator 302, and the comparator 302 compares the comparable value with a power value (first limit). The comparator 302 forwards the results to calculator 103, and the calculator 103 input the results to the second comparator 104 which comparing the results with different power value (second limit). Thus, the comparable value that is generated by the power multiplier 301 is compared against first and second limits.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 2, 11-14, 23, 24, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al. (Pub No.: 2002/0141349).

For claim 1, Kim et al. disclosed the method of setting a data rate for a communication channel to be used for transmitting data to a remote receiver at a variable transmit power that is controlled upward and downward by the remote receiver as needed to achieve a desired received data quality at the remote receiver (see fig. 2, box 21, 22, 23, and 24 and see fig. 3, determinator box 34, and see paragraph 0039, lines 1-14); As shown in the reference, the determinator box 34 determine the adjustment based on transmission energy level received in the comparator 33, and set

a new data rate to the transmitter 35. Moreover, as shown in fig. 2, the mobile station comprises a demodulator to adjust the data rate received from base station; monitoring transmit power information for the communication channel as an indication of current radio conditions at the remote receiver (**see fig. 3, Interference level detector box 32 and comparator 33, see paragraph 0046, lines 1-10**); In the reference 32 estimate and detect the received signal power from the mobile station, and monitoring by compare the power with the threshold using comparator 33. Therefore we can interpreted that units 32 and 33 monitors the transmit power information of a current mobile condition; and changing the data rate for the communication channel based on the transmit power information (**see fig. 3, determinator box 34, and see paragraph 0047, lines 1-10**). The determinator box 34 is configured to adjust the data rate based on the power level in the comparator 33. Further, we can interpret that the units 32, 33 and 34 can be combined to form a rate adaptor circuit.

Regarding to claim 2, Kim et al. also disclosed the method of wherein setting a data rate for a communication channel to be used for transmitting data to a remote receiver at a variable transmit power comprises setting the data rate of a communication channel assigned to the remote receiver to a desired data rate (**see fig. 3, determinator box 34, and see paragraph 0047, lines 1-10**). The determinator box 34 is configured to adjust the data rate based on the comparator 33. Further, we can interpret that the units 32, 33 and 34 can be combined to form a rate adaptor circuit.

Regarding to claim 11, Kim et al. also disclosed the method of wherein monitoring transmit power information for the communication channel as an indication of

current radio conditions at the remote receiver comprises monitoring power control commands sent from the remote receiver that are associated with controlling the transmit power of the communication channel (**see fig. 3, Interference level detector box 32 and comparator 33, see paragraph 0046, lines 1-10**); In the reference 32 estimate and detect the received signal power from the mobile station, and monitoring by compare the power with the threshold using comparator 33.

Regarding to claim 12, Kim et al. also disclosed the method of generating one or more filtered values of the power control commands and determining whether the one or more filtered values indicate predominantly up commands or indicate predominantly down commands (**see fig. 3, Interference level detector box 32 and comparator 33, see paragraph 0046, lines 1-10**); In the reference 32 estimate and detect the received signal power from the mobile station, and monitoring by compare the power with the threshold using comparator 33. The data rate is adjusted (increase, decrease or maintain) based on power. Up and down commands can be interpreted as when the upper and lower thresholds are reached.

Regarding to claim 13, Kim et al. also disclosed the method of wherein changing the data rate for the communication channel based on the transmit power information comprises initiating a downward rate change if the one or more filtered values indicate predominantly up commands (**see fig. 3, Interference level detector box 32 and comparator 33, see paragraph 0046, lines 1-10**); In the reference 32 estimate and detect the received signal power from the mobile station, and monitoring by compare the power with the threshold using comparator 33. The data rate is adjusted (increase,

decrease or maintain) based on power. Up command can be interpreted as when the upper threshold is reached.

Regarding to claim 14, Kim et al. also disclosed the method of wherein changing the data rate for the communication channel based on the transmit power information comprises initiating an upward rate change if the one or more filtered values indicate predominantly down commands **(see fig. 3, Interference level detector box 32 and comparator 33, see paragraph 0046, lines 1-10)**; In the reference 32 estimate and detect the received signal power from the mobile station, and monitoring by compare the power with the threshold using comparator 33. The data rate is adjusted (increase, decrease or maintain) based on power. Down command can be interpreted as when the lower threshold is reached.

Regarding to claim 23, Kim et al. also disclosed the method of transmitter circuits to transmit radio signals on one or more forward link communication channels to mobile stations **(see fig. 3, transmission processor, box 35, and see paragraph 0043, lines 1-10)**; In the reference, the transmission processor 35 can be the transmitter circuits; and a forward link processing circuit to control the transmitter circuits **(see fig. 3, determinator box 34, comparator 33, and detector 32, and see paragraph 0046, lines 1-10, and 0047, lines 1-10)**; As shown in the reference, the transmission processor is depending on the determinator 34, therefore, 32, 33, and 34 can be the forward link processing circuit; the forward link processing circuit configured to set a data rate for a communication channel to be used for transmitting data to a mobile station at a variable transmit power that is controlled upward and downward by the

mobile station as needed to achieve a desired received data quality at the mobile station (see fig. 2, box 21, 22, 23, and 24 and see fig. 3, determinator box 34, and see paragraph 0039, lines 1-14); As shown in the reference, the determinator box 34 determine the adjustment based on transmission energy level received in the comparator 33, and set a new data rate to the transmitter 35. Moreover, as shown in fig. 2, the mobile station comprises a demodulator to adjust the data rate received from base station; and the forward link processing circuit comprising a rate adaptor circuit configured to: monitor transmit power information for the communication channel as an indication of current radio conditions at the mobile station (see fig. 3, Interference level detector box 32 and comparator 33, see paragraph 0046, lines 1-10); In the reference 32 estimate and detect the received signal power from the mobile station, and compare the power with the threshold using comparator 33. Therefore we can interpreted that units 32 and 33 monitors the transmit power information of a current mobile condition; and change the data rate for the communication channel based on the transmit power information (see fig. 3, determinator box 34, and see paragraph 0047, lines 1-10). The determinator box 34 is configured to adjust the data rate based on the comparator 33. Further, we can interpret that the units 32, 33 and 34 can be combined to form a rate adaptor circuit.

Regarding to claim 24, Kim et al. also disclosed the method of wherein the radio base station is configured to set the data rate for the communication channel to a desired value and the rate adaptor circuit is configured to adapt the data rate as needed based on monitoring the transmit power information (see fig. 3, determinator box 34,

and see paragraph 0047, lines 1-10). The determinator box 34 is configured to adjust the data rate based on the comparator 33. Further, we can interpret that the units 32, 33 and 34 can be combined to form a rate adaptor circuit.

Regarding to claim 33, Kim et al. also disclosed the method of wherein the rate adaptor circuit is configured to monitor the transmit power information for the communication channel by comparing an average transmit power used for transmission of data on the communication channel to upper and lower power limits set for the channel (**see paragraph 0046, lines 1-12, and paragraph 0047, lines 1-10, and see fig. 3**). In the reference, unit 32 detects the received signal from mobile station, and it compares the received value with the predetermined threshold, and the predetermined value is the upper limit, and the lower limit is zero.

Claim Rejections - 35 USC § 103

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 3, 4, 6, 7, 15, and 25-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (Pub No.: 2002/0141349) in view of Mimura (Pat No.: 6393005).

For claim 3, Kim et al. disclosed all the subject matter of the claimed invention with the exception of wherein monitoring transmit power information for the communication channel as an indication of current radio conditions at the remote receiver comprises generating one or more filtered values of the transmit power and comparing the one or more filtered values against defined upper and lower power limits. Mimura from the same or similar fields of endeavor teaches the method of wherein monitoring transmit power information for the communication channel as an indication of current radio conditions at the remote receiver comprises generating one or more filtered values of the transmit power and comparing the one or more filtered values

against defined upper and lower power limits (see column 10, lines 15-25, and see fig. 5 box 301, and box 302). In the reference and fig. 5, the power multiplier 301 multiply the received values by the previous power reduction rate, and forward the new value to the comparators 302, and 302 take the new value and compare it with the preset maximum transmitting power, therefore we can interpreted that 301 is the filter. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Mimura in the network of Kim et al. The motivation for using the method as taught by Mimura in the network of Kim et al. being that it provides more accurate in term of generating a new value to compare.

Regarding to claim 4, Kim et al. also disclosed the method of wherein changing the data rate for the communication channel based on the transmit power information comprises initiating a downward rate change if one of the one or more filtered values approaches the upper power limit, and initiating an upward rate change if one of the one or more filtered values approaches the lower power limit (see paragraph 0045, lines 1-17). As shown, when the ROT gets too high, the rate will be decreased, and when ROT gets too low, the rate will be increased.

Regarding to claim 6, Kim et al. disclosed all the subject matter of the claimed invention with the exception of wherein monitoring transmit power information for the communication channel as an indication of current radio conditions at the remote receiver comprises generating one or more filtered values of the transmit power and comparing the one or more filtered values against a first threshold for determining whether to initiate a rate decrease, and against a second threshold for determining

whether to initiate a rate increase. Mimura also disclosed the method of wherein monitoring transmit power information for the communication channel as an indication of current radio conditions at the remote receiver comprises generating one or more filtered values of the transmit power and comparing the one or more filtered values against a first threshold for determining whether to initiate a rate decrease, and against a second threshold for determining whether to initiate a rate increase (**see column 10, lines 15-25, and column 12, lines 25-40 and see fig. 5 box 301, and box 302**). In the reference and fig. 5, the power multiplier 301 multiply the received values by the previous power reduction rate, and forward the new value to the comparators 302, and 302 take the new value and compare it with the preset maximum and minimum transmitting power, therefore we can interpreted that 301 is the filter. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Mimura in the network of Kim et al. The motivation for using the method as taught by Mimura in the network of Kim et al. being that it provides more accurate in term of generating a new value to compare.

Regarding to claim 7, Kim et al. also disclosed the method of wherein the second threshold comprises a threshold set relative to an upper power bound associated with a higher data rate, such that a change to that higher data rate is not initiated unless the comparison indicates that a desired power margin would exist if the data rate is increased to the higher data rate (**see fig. 3, Interference level detector box 32 and comparator 33, see paragraph 0046, lines 1-10**); In the reference 32 estimate and detect the received signal power from the mobile station, and monitoring by compare

the power with the threshold using comparator 33. Therefore we can interpreted that units 32 and 33 monitors the transmit power information of a current mobile condition.

Regarding to claim 15, Kim et al. disclosed all the subject matter of the claimed invention with the exception of wherein generating one or more filtered values of the power control commands and determining whether the one or more filtered values indicate predominantly up commands or predominantly down commands comprises generating a first filtered value according to a first filter time constant and generating a second filtered value according to a second filter time constant, and basing the determination of downward rate changes on the first filtered value and basing the determination of upward rate changes on the second filtered value. Mimura also disclosed the method of wherein generating one or more filtered values of the power control commands and determining whether the one or more filtered values indicate predominantly up commands or predominantly down commands comprises generating a first filtered value according to a first filter time constant and generating a second filtered value according to a second filter time constant, and basing the determination of downward rate changes on the first filtered value and basing the determination of upward rate changes on the second filtered value **(see column 10, lines 15-25, and column 12, lines 25-40 and see fig. 5 box 301, and box 302)**. In the reference and fig. 5, the power multiplier 301 multiply the received values by the previous power reduction rate, and forward the new value to the comparators 302, and 302 take the new value and compare it with the preset maximum and minimum transmitting power, therefore we can interpreted that 301 is the filter. The filter is able to generate a new

value based on the previous value; therefore the filter is able to generate new value based on downward and upward rates.

Regarding to claim 25, Kim et al. disclosed all the subject matter of the claimed invention with the exception of wherein the rate adaptor circuit comprises one or more filter circuits to generate one or more filtered values related to transmit power for the communication channel as the transmit power information; and wherein the rate adaptor circuit is configured to monitor the transmit power information for the communication channel by comparing the one or more filtered values against one or more rate change thresholds. Mimura also disclosed the method of wherein the rate adaptor circuit comprises one or more filter circuits to generate one or more filtered values related to transmit power for the communication channel as the transmit power information; and wherein the rate adaptor circuit is configured to monitor the transmit power information for the communication channel by comparing the one or more filtered values against one or more rate change thresholds **(see column 10, lines 15-25, and see fig. 5 box 301, and box 302)**. In the reference and fig. 5, the power multiplier 301 multiply the received values by the previous power reduction rate, and forward the new value to the comparators 302, and 302 take the new value and compare it with the preset maximum transmitting power, therefore we can interpreted that 301 is the filter. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Mimura in the network of Kim et al. The motivation for using the method as taught by Mimura in the network of Kim et al. being that it provides more accurate in term of generating a new value to compare.

Regarding to claim 26, Kim et al. disclosed all the subject matter of the claimed invention with the exception of wherein the rate adaptor circuit is configured to reset at least one of the one or more filtered values responsive to initiating a rate increase or a rate decrease. Mimura also disclosed the method of wherein the rate adaptor circuit is configured to reset at least one of the one or more filtered values responsive to initiating a rate increase or a rate decrease (**see column 13, lines 35-52 and see fig. 5, box 305**). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Mimura in the network of Kim et al. The motivation for using the method as taught by Mimura in the network of Kim et al. being that it provides more accurate in term of generating a new value to compare.

Regarding to claim 27, Kim et al. disclosed all the subject matter of the claimed invention with the exception of wherein, after initiating a rate increase based on a filtered value, the rate adaptor circuit is configured to reset the filtered value to be greater than it was before the rate increase was initiated. Mimura also disclosed the method of wherein, after initiating a rate increase based on a filtered value, the rate adaptor circuit is configured to reset the filtered value to be greater than it was before the rate increase was initiated (**Mimura see column 10, lines 15-25, and see fig. 5 box 301, and box 302**). In the reference and fig. 5, the power multiplier 301 multiply the received values by the previous power reduction rate, therefore we can interpreted that 301 is the filter that can reset to greater value.

Regarding to claim 28, Kim et al. disclosed all the subject matter of the claimed invention with the exception of wherein, after initiating a rate decrease based on a

filtered value, the rate adaptor circuit is configured to reset the filtered value to be less than it was before the rate decrease was initiated. Mimura also disclosed the method of wherein, after initiating a rate decrease based on a filtered value, the rate adaptor circuit is configured to reset the filtered value to be less than it was before the rate decrease was initiated (**see column 10, lines 15-25, and see fig. 5 box 301, and box 302**). In the reference and fig. 5, the power multiplier 301 multiply the received values by the previous power reduction rate, therefore we can interpreted that 301 is the filter that can reset to lower value. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Mimura in the network of Kim et al. The motivation for using the method as taught by Mimura in the network of Kim et al. being that it provides more accurate in term of generating a new value to compare.

Regarding to claim 29, Kim et al. also disclosed the method of wherein the rate adaptor circuit is configured to change the data rate for the communication channel based on the transmit power information by initiating a downward rate change if one of the one or more filtered values approaches a rate decrease threshold, and initiating an upward rate change if one of the one or more filtered values approaches a rate increase threshold (**see paragraph 0028, lines 1-12**). As shown in the reference, the base station informing the mobile station to increase, decrease, or maintain the rate based on the requirement of application.

Regarding to claim 30, Kim et al. also disclosed the method of wherein the rate adaptor circuit is configured to generate a first filtered value according to a first filter

time constant for use in determining whether to initiate a downward rate change and generate a second filtered value according to a second, longer filter time constant for use in determining whether to initiate an upward rate change (**see paragraph 0028, lines 1-12**). As shown in the reference, the base station informing the mobile station to increase, decrease, or maintain the rate based on the requirement of application.

Regarding to claim 31, Kim et al. disclosed all the subject matter of the claimed invention with the exception of wherein the rate adaptor circuit comprises one or more filter circuits to generate one or more filtered values of transmit power for the communication channel, and wherein the rate adaptor circuit is configured to monitor the transmit power information for the communication channel by comparing the one or more filtered values against a rate increase threshold and a rate decrease threshold. Mimura also teaches the method of wherein the rate adaptor circuit comprises one or more filter circuits to generate one or more filtered values of transmit power for the communication channel, and wherein the rate adaptor circuit is configured to monitor the transmit power information for the communication channel by comparing the one or more filtered values against a rate increase threshold and a rate decrease threshold (**see column 10, lines 15-25, and see fig. 5 box 301, and box 302**). In the reference and fig. 5, the power multiplier 301 multiply the received values by the previous power reduction rate, and forward the new value to the comparators 302, and 302 take the new value and compare it with the preset maximum transmitting power, therefore we can interpreted that 301 is the filter.

Regarding to claim 32, Kim et al. also disclosed the method of wherein the rate adaptor circuit is configured to set the rate increase threshold based on a power requirement associated with a higher data rate, and is further configured to initiate a change to the higher data rate if the comparison indicates that a sufficient power margin would be maintained for the communication channel at the higher data rate (**see paragraph 0046, lines 1-12, and paragraph 0047, lines 1-10, and see fig. 3**). In the reference, unit 32 detects the received signal from mobile station, and it compares the received value with the predetermined threshold, and based on the comparator to adjust a new data rate.

14. Claims 8, 10, 16-19, 41, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (Pub No.: 2002/0141349) in view of Chen et al. (Pub No.: 2001/0040880).

For claim 8, Kim et al. disclosed all the subject matter of the claimed invention with the exception of wherein monitoring transmit power information for the communication channel as an indication of current radio conditions at the remote receiver comprises comparing an average transmit power used for transmission of data on the communication channel to upper and lower power limits set for the channel, wherein a high average power indicates relatively poor current radio conditions at the remote terminal and wherein a low average power indicates relatively good current radio conditions at the remote terminal. Chen et al. from the same or similar fields of

endeavor teaches the method of wherein monitoring transmit power information for the communication channel as an indication of current radio conditions at the remote receiver comprises comparing an average transmit power used for transmission of data on the communication channel to upper and lower power limits set for the channel, wherein a high average power indicates relatively poor current radio conditions at the remote terminal and wherein a low average power indicates relatively good current radio conditions at the remote terminal (**see paragraph 0027, lines 1-15**). As shown, if the signal quality at the remote is too poor, the received transmission will be decreased. It's also true with the converse situation. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Chen et al. in the network of Kim et al. The motivation for using the method as taught by Chen et al. in the network of Kim et al. being that it provides many sub-supplemental channels to send commands for power adjustment.

Regarding to claim 10, Kim et al. disclosed all the subject matter of the claimed invention with the exception of wherein updating the transmit power information according to a defined transmission frame timing associated with the communication channel comprises updating the transmit power information on at least a per frame basis. Chen et al. also teaches the method of wherein updating the transmit power information according to a defined transmission frame timing associated with the communication channel comprises updating the transmit power information on at least a per frame basis (**see paragraph 0012, lines 1-10**). As shown, the power in the supplemental channel is adjusted based on feedback received from one power control

sub-channel, which we can interpreted as per frame basis. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Chen et al. in the network of Kim et al. The motivation for using the method as taught by Chen et al. in the network of Kim et al. being that it provides many sub-supplemental channels to send commands for power adjustment.

Regarding to claim 16, Kim et al. disclosed all the subject matter of the claimed invention with the exception of wherein the network comprises a cdma2000 network and the communication channel comprises a forward link supplemental channel (F-SCH) at a radio base station in the network to be used for serving a particular mobile station, and wherein changing the data rate for the communication channel based on the transmit power information comprises sending a rate change request for the forward link supplemental channel from the radio base station to an associated base station controller. Chen et al. also disclosed the method of wherein the network comprises a cdma2000 network and the communication channel comprises a forward link supplemental channel (F-SCH) **(see paragraph 0040, lines 1-10)** at a radio base station in the network to be used for serving a particular mobile station, and wherein changing the data rate for the communication channel based on the transmit power information comprises sending a rate change request for the forward link supplemental channel from the radio base station to an associated base station controller **(see paragraph 0023, lines 1-15, see paragraph 0041, lines 1-10, and see fig. 1)**. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Chen et al. in the network of Kim et al. The

motivation for using the method as taught by Chen et al. in the network of Kim et al. being that it provides many sub-supplemental channels to send commands for power adjustment.

Regarding to claim 17, Kim et al. disclosed all the subject matter of the claimed invention with the exception of sending an extended supplemental channel assignment message from the base station controller for transmission to the remote receiver to inform the remote receiver of a change in a current data rate assignment of the forward link supplemental channel. Chen et al. also teaches the method of sending an extended supplemental channel assignment message from the base station controller for transmission to the remote receiver to inform the remote receiver of a change in a current data rate assignment of the forward link supplemental channel **(see paragraph 0023, lines 1-15, see paragraph 0041, lines 1-10, and see fig. 1).**

Regarding to claim 18, Kim et al. disclosed all the subject matter of the claimed invention with the exception of wherein monitoring transmit power information for the communication channel as an indication of current radio conditions at the remote receiver comprises maintaining one or more filtered values indicative of transmit power for the communication channel. Chen et al. also teaches the method of wherein monitoring transmit power information for the communication channel as an indication of current radio conditions at the remote receiver comprises maintaining one or more filtered values indicative of transmit power for the communication channel **(see paragraph 0027, lines 1-15).**

Regarding to claim 19, Kim et al. disclosed all the subject matter of the claimed invention with the exception of wherein changing the data rate for the communication channel based on the transmit power information comprises comparing one or more filtered values to one or more rate change threshold values to determine whether a rate change is warranted. Chen et al. also teaches the method of wherein changing the data rate for the communication channel based on the transmit power information comprises comparing one or more filtered values to one or more rate change threshold values to determine whether a rate change is warranted **(see paragraph 0069, lines 1-10)**.

For claim 41, Kim et al. disclosed all the subject matter of the claimed invention with the exception of wherein the radio base station comprises an IS-2000 radio base station for use in a cdma2000 wireless communication network and the communication channel comprises a forward link supplemental channel (F-SCH) to be used for serving a particular mobile station, and wherein the radio base station is configured to change the data rate by sending a rate change request for the forward link supplemental channel to an associated base station controller. Chen et al. also teaches the method of wherein the radio base station comprises an IS-2000 radio base station for use in a cdma2000 wireless communication network **(see paragraph 0032, line1-10)**, and the communication channel comprises a forward link supplemental channel (F-SCH) to be used for serving a particular mobile station **(see paragraph 0040, line1-10)**, and wherein the radio base station is configured to change the data rate by sending a rate change request for the forward link supplemental channel to an associated base station controller **(see paragraph 0023, lines 1-15, see paragraph 0041, lines 1-10, and see**

fig. 1). The sub-channel can be operated to send commands to adjust the transmit power, and based on the power the data rate is changed. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Chen et al. in the network of Kim et al. The motivation for using the method as taught by Chen et al. in the network of Kim et al. being that it provides many sub-supplemental channels to send commands for power adjustment.

For claim 42, Kim et al. disclosed all the subject matter of the claimed invention with the exception of wherein the base station controller is configured to send an extended supplemental channel assignment message for transmission to the mobile station to inform the mobile station of a changed data rate assignment for the forward link supplemental channel. Chen et al. also teaches the method of wherein the base station controller is configured to send an extended supplemental channel assignment message for transmission to the mobile station to inform the mobile station of a changed data rate assignment for the forward link supplemental channel (**see paragraph 0041, line1-10**). The sub-channel can be operated to send commands to adjust the transmit power, and based on the power the data rate is changed.

15. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (Pub No.: 2002/0141349) in view of Chen et al. (Pub No.: 2001/0040880), as applied to claim 19 above, and further in view of Mimura (Pat No.: 6393005).

For claim 20, Kim et al. and Chen et al. both disclosed all the subject matter of the claimed invention with the exception of resetting at least one of the one or more

filtered values responsive to initiating a rate increase or a rate decrease. Mimura also disclosed the method of resetting at least one of the one or more filtered values responsive to initiating a rate increase or a rate decrease (**see column 13, lines 35-52 and see fig. 5, box 305**). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Mimura in the network of Chen et al. and Kim et al. The motivation for using the method as taught by Mimura in the network of Kim et al. and Chen et al. being that it provides accurate evaluation from the filter in term of generating new value.

For claim 21, Kim et al. and Chen et al. both disclosed all the subject matter of the claimed invention with the exception of after initiating a rate increase based on a filtered value, resetting the filtered value to be greater than it was before the rate increase was initiated. Mimura also teaches the method of after initiating a rate increase based on a filtered value, resetting the filtered value to be greater than it was before the rate increase was initiated (**see column 13, lines 35-52 and see fig. 5, box 305**). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Mimura in the network of Chen et al. and Kim et al. The motivation for using the method as taught by Mimura in the network of Kim et al. and Chen et al. being that it provides accurate evaluation from the filter in term of generating new value.

For claim 22, Kim et al. and Chen et al. both disclosed all the subject matter of the claimed invention with the exception of after initiating a rate decrease based on a filtered value, resetting the filtered value to be less than it was before the rate decrease

was initiated. Mimura also teaches the method of after initiating a rate decrease based on a filtered value, resetting the filtered value to be less than it was before the rate decrease was initiated (**see column 13, lines 35-52 and see fig. 5, box 305**). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Mimura in the network of Chen et al. and Kim et al. The motivation for using the method as taught by Mimura in the network of Kim et al. and Chen et al. being that it provides accurate evaluation from the filter in term of generating new value.

16. Claims 9, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (Pub No.: 2002/0141349) in view of Cordier et al. (Pub No.: 2003/0099222).

For claim 9, Kim et al. disclosed all the subject matter of the claimed invention with the exception of updating the transmit power information according to a defined transmission frame timing associated with the communication channel. Cordier et al. from the same or similar fields of endeavor teaches the method of updating the transmit power information according to a defined transmission frame timing associated with the communication channel (**see paragraph 0013, lines 1-10, and aragraph 0014, lines 1-5**). As shown in the reference, the power level of the base station can be adjusted or updated each time it reaches desired communication level, which can be interpreted as frame timing. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Cordier et al. in the

network of Kim et al. The motivation for using the method as taught by Cordier et al. in the network of Kim et al. being that it provides all base stations in an active set are able to adjust the data rate and balance the load among themselves.

For claim 34, Kim et al. disclosed all the subject matter of the claimed invention with the exception of wherein the rate adaptor circuit is configured to update the transmit power information according to a defined transmission frame timing associated with the communication channel. Cordier et al. from the same or similar fields of endeavor teaches the method of wherein the rate adaptor circuit is configured to update the transmit power information according to a defined transmission frame timing associated with the communication channel **(see paragraph 0013, lines 1-10, and paragraph 0014, lines 1-5)**. As shown in the reference, the power level of the base station can be adjusted or updated each time it reaches desired communication level, which can be interpreted as frame timing.

For claim 35, Kim et al. disclosed all the subject matter of the claimed invention with the exception of wherein the rate adaptor circuit updates the transmit power information on at least a per frame basis. Cordier et al. also teaches the method of wherein the rate adaptor circuit updates the transmit power information on at least a per frame basis **(see paragraph 0013, lines 1-10, and paragraph 0014, lines 1-5)**. As shown in the reference, the power level of the base station can be adjusted or updated each time it reaches desired communication level, which can be interpreted as frame timing.

17. Claims 36-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (Pub No.: 2002/0141349) in view of Lee et al. (Pub No.: 2003/0050086).

For claim 36, Kim et al. disclosed all the subject matter of the claimed invention with the exception of wherein the rate adaptor circuit is configured to monitor transmit power information for the communication channel by monitoring power control commands sent from the mobile station that are associated with controlling the transmit power of the communication channel. Lee et al. from the same or similar fields of endeavor teaches the method of wherein the rate adaptor circuit is configured to monitor transmit power information for the communication channel by monitoring power control commands sent from the mobile station that are associated with controlling the transmit power of the communication channel **(see paragraph 0084, lines 1-8)**. As shown in the reference, the mobile sends a request to the base station to have the permission to adjust the data rate and the base station checks the request and sends back an acknowledgment back to the mobile station. The request in the reference can be a command. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Lee et al. in the network of Kim et al. The motivation for using the method as taught by Lee et al. in the network of Kim et al. being that the base station has the control to adjust the signal power received from the mobile station in variable data rate mode.

Regard to claim 37, Lee et al. also teaches the method of wherein the rate adaptor circuit is configured to determine whether a greater percentage of the power control commands are up commands or are down commands **(see paragraph 0148,**

lines 1-20). Although, the reference did not explicitly reveal the method, however the mobile station judges or determines the received commands whether it should heighten or maintain the data rate it obvious to the person of ordinary skill in the art to determine whether a greater percentage is up or down commands.

Regarding to claim 38, Kim et al. also disclosed the method of wherein the rate adaptor circuit is configured to initiate a downward rate change if the greater percentage of the power control commands are up commands, and to initiate an upward rate change if the greater percentage of the power control commands are down commands. **(see paragraph 0045, lines 1-17).** As shown, when the ROT gets too high, the rate will be decreased, and when ROT gets too low, the rate will be increased. The greater percentage of up commands can be interpreted as the rate is approaching to the high threshold level.

Regarding to claim 39, Kim et al. also disclosed the method of wherein the rate adaptor circuit is configured to filter the power control commands according to a first filter time constant to determine whether to initiate a downward rate change, and is configured to filter the power control commands according to a second, longer filter time constant to determine whether to initiate an upward rate change **(see paragraph 0028, lines 1-12).** As shown in the reference, the base station informing the mobile station to increase, decrease, or maintain the rate based on the requirement of application.

Regarding to claim 40, Kim et al. also disclosed the method of wherein the rate adaptor circuit is configured to initiate a downward rate change if the power control commands predominantly are up commands, and to initiate an upward rate change if

the power control commands predominantly are down commands. (see paragraph 0045, lines 1-17). As shown, when the ROT gets too high, the rate will be decreased, and when ROT gets too low, the rate will be increased. The greater percentage of up commands can be interpreted as the rate is approaching to the high threshold level.

Allowable Subject Matter

18. Claim 5 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. The prior art failed to teach the method of generating a first filtered value for use in determining whether to initiate a downward rate change and generating a second filtered value for use in determining whether to initiate an upward rate change, and further comprising using a longer filter time constant to generate the second filtered value as compared to the first filtered value.

Conclusion

19. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAN YUEN whose telephone number is (571)270-1413. The examiner can normally be reached on Monday-Friday 10:00a.m-3:00p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky O. Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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